

REMARKS

Claims 21-23, 26-28, 30-35, 44, 76-78, 81, 82, 84-89 and 97 were currently pending. Claims 44 and 97 have been cancelled without prejudice. As such, claims 21-23, 26-28, 30-35, 76-78, 81, 82 and 84-89 are currently pending.

A. Shibuta and Glatkowski

Claims 44 and 97 were rejected under 35 U.S.C. 102(b) or 103(a) over U.S. Patent No. 5,853,877 (“Shibuta”). Claims 44 and 97 were also rejected under 35 U.S.C. 102(e) or 103(a) over U.S. Patent No. 7,118,693 (“Glatkowski”). Applicants disagree with both of these rejections. Nevertheless, simply to expedite prosecution, and not for any reasons related to patentability, claims 44 and 97 have been cancelled without prejudice. Thus, this issue is moot and removal of this rejection is respectfully requested.

B. Zhou and Haddon

Claims 21, 23, 27-28, 30, 33-34, 44 and 76 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,422,450 (“Zhou”) in view of U.S. Patent No. 6,331,262 (“Haddon”). Applicants respectfully traverse.

As p. 4 of the Office Action admits, Zhou (col. 4, lines 25-52, etc.) teaches the following steps in the following order:

- (a) adding carbon nanotubes to a solvent,
- (b) dispersing said carbon nanotubes in said solvent
- (c) filtering said nanotubes from said solvent, then
- (d) optionally milling said nanotubes.

On the other hands, Applicants’ independent claim 21 recites:

- (a) adding carbon nanotubes to solution,

- (b) milling said carbon nanotubes in said solution, then
- (c) filtering said solution.

Thus, Zhou differ from Applicants' process in at least two respects. First, in Zhou's process, the milling step (if optionally employed) occurs after the filtering step while in Applicants' process, the milling step occurs before the filtering step. Second, Zhou optionally mills the filtered carbon nanotubes itself, not carbon nanotubes while they are in the solvent. (col. 4, lines 42-51; Fig 2). On the other hand, Applicants' process mills carbon nanotubes while in solution.

These two process differences result in different products. Specifically, Zhou's product is not an electroconductive ink, but rather a material which must be solution-deposited onto the substrate in order to create an electroconductive coating. (col. 4, lines 42-col. 5, line 7). On the other hand, Applicants' process produces electroconductive inks which can be applied to a substrate in a number of other ways, such as screen printed, sprayed, brushed, dipped, etc to form an electroconductive coating. (abstract, p. 10, lines 18-19).

Haddon, which is only relied on to teach the aspect ratio of SWNT, fails to make up for these deficiencies. As such removal of this rejection is respectfully requested.

C. Zhou, Hadden, and Shibuta

Claims 31-32 and 35 were rejected under 35 U.S.C. 103(a) over Zhou in view of Haddon and Shibuta. Applicants respectfully traverse.

The Office Action notes that the combination of Zhou and Haddon as asserted earlier fails to teach the specific fibril limitation of claims 31, 32 and 35, and thus relies on Shibuta to make up for this deficiency. However, Applicants respectfully submit that, for the same reasons stated above in Section B, the combination of Zhou and Haddon fail to teach all of

the limitations of claims 31-32 and 35, and Shibuta (which is relied on for specific fibril limitations) fails to make up for those deficiencies. Therefore, withdrawal of this rejection is respectfully requested.

D. Shibuta and Zhou

Claims 21-23, 26-28, 30-35, 76-78, 81-82 and 84-89 were rejected under 35 U.S.C. § 103(a) over Shibuta in view of Zhou. Specifically, pp. 6-7 of the Office Action admits that Shibuta fails to teach the filtering step of Applicants' claims and relies on Zhou to make up for this missing step. Applicants respectfully traverse.

As discussed in Section B above, Zhou's filtering step occurs prior to the milling step. Thus, one of ordinary skill in the art seeking to combine the teachings of Zhou with Shibuta would therefore filter the carbon nanotubes before milling, contrary to the order of the steps recited in Applicants' claims. As such, withdrawal of this rejection is respectfully requested.

E. Glatkowski

Claims 21-23, 26-28, 32-35, 76-78, 81-82 and 84-89 were rejected under 35 U.S.C. § 103(a) over Glatkowski. Applicants respectfully traverse.

As p. 7 of the Office Action admits, Glatkowski teaches the use of a ultrasonic homogenizer to disperse the carbon nanotubes in solvents. (Col. 10, lines 40-67). An ultrasonic homogenizer uses ultrasound waves to disperse carbon nanotubes. This is not the same as milling, which is a mechanical process that requires a milling machine. Indeed, Applicants' claims 21 and 23 and teachings at p. 23, lines 13-p. 24, line 2 confirm that sonication and milling are two different steps. Glatkowski does not teach or suggest the specific milling limitation as

recited in Applicants' lone independent claim 21. In fact, Glatkowski does not teach or suggest any milling step at all for any purpose.

Once again, this was confirmed the cited Free Dictionary source provided by the Final Office Action of April 21, 2008 which states that milling means "To grind, pulverize, or break down into smaller particles **in a mill**." (emphasis added). The Free Dictionary definition confirmed Applicants' position that milling is a mechanical process that uses a milling machine (aka, a "mill" which is defined by the same Free Dictionary source as "a machine or device that reduces a solid or coarse substance into pulp or minute grains by crushing, grinding or pressing" – all of which are mechanical processes).

As such Glatkowski fails to teach or suggest this specific limitation of Applicants' claims. The Office Action's argument that "milling" "encompasses even mixing the components in a beaker using a glass rod" is unsubstantiated in light of Applicants' teachings, the well understood meaning of "milling" in this field, and the lack of any evidence cited in support of the Office Action's position. The Office Action also mistakenly cites to col. 15, lines 45-65 of U.S. Patent No. 7,108,441, which contains nothing of the sort in support of the Office Action's argument. Finally, the Office Action provides no support which would allow one of ordinary skill in the art interpret "milling" to include ultrasonic dispersion. As such, this ground for rejection cannot be maintained. MPEP 706.02(j).

Furthermore, as p. 7 of the Office Action further admits, Glatkowski only teaches a centrifuging step and fails to teach or suggest the filtering step of Applicants' claims. Once again, the Office Action fails to cite any evidence in support of its position that it is obvious to substitute filtering for the centrifuging step taught in Glatkowski. As stated in Applicants' previous response, the cited portion of U.S. Patent No. 6,099,965, col. 25, line 11-15 relied on by

the Office Action at p. 10 does not support this proposition. As such, this ground for rejection cannot be maintained. MPEP 706.02(j).

Therefore, withdrawal of this rejection is respectfully requested.

F. Glatkowski and Shibuta

Claims 30 and 84 were rejected under 35 U.S.C. § 103(a) over Glatkowski in view of Shibuta. Shibuta is being relied on to make up for the missing claimed solvents of claims 30 and 84. However, Shibuta stills fail to make up for Glatkowski's deficiencies set forth above in Section E. As such, withdrawal of this rejection is respectfully requested.

Claims 31 and 85 were also rejected under 35 U.S.C. § 103(a) over Glatkowski in view of Shibuta. Shibuta is being relied on to make up for the missing fibril limitations of claims 31 and 85. However, Shibuta still fails to make up for Glatkowski's deficiencies as explained above in Section E.

As such, Applicants respectfully submit that the pending claims 21-23, 26-28, 30-35, 76-78, 81, 82 and 84-89 are allowable and a notice to that effect is respectfully requested.

No fees are believed due in connection with this filing. However, if any additional fees are necessary, the Director is hereby authorized to charge such fees to Deposit Account No. 50-0540.

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Respectfully submitted,

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